AMENDMENTS TO THE CLAIMS

Please amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1-23. Cancelled.

24. (Currently Amended) A method of inducing organized, functional bone formation at a site of bone infirmity in a human, comprising the steps of:

(a) transforming a cultured mesenchymal stem cell with a DNA encoding human bone morphogen[[et]]ic protein 2 (BMP-2);

(b) culturing the cultured mesenchymal stem cell transformed in step (a), under conditions enabling expression of said DNA encoding bone morphogenic[[esis]] protein 2; and

(c) implanting said cultured mesenchymal stem cell in the absence of an exogenously supplied osteoinductive matrix at a site of bone infirmity,

whereby autocrine and paracrine effects of expressed human bone morphogenic[[esis]] protein 2 at said site of bone infirmity result in organized, functional bone formation, thereby inducing organized, functional bone formation at a site of bone infirmity.

25 (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell is a primary cell.

26. (Previously Presented) The method of claim 24, wherein said mesenchymal stem

cell is a cultured cell line.

27. (Currently Amended) The method of claim 24, wherein said mesenchymal stem cell expresses an endogenous bone morphogenic[[esis]] protein receptor.

28. (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell expresses parathyroid hormone and a parathyroid hormone receptor protein.

29. (New) The method of claim 24, wherein said cultured mesenchymal stem cell is implanted in the absence of any exogenously supplied matrix.